UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,971	02/05/2004	Joseph Z. Lu	I20 06799US	5188

128 7590 11/28/2007

HONEYWELL INTERNATIONAL INC.
101 COLUMBIA ROAD
P O BOX 2245
MORRISTOWN, NJ 07962-2245

EXAMINER	
LO, SUZANNE	
ART UNIT	PAPER NUMBER
2128	
MAIL DATE	DELIVERY MODE
11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/772,971	LU, JOSEPH Z.	
	Examiner	Art Unit	
	Suzanne Lo	2128	

mv

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-30 have been presented for examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 12-19, 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites, "at least one input operable to receive a first signal and a second signal", while an input port or input bus may receive an input, it is unclear how an input itself receives another input (first and second signal).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The MPEP 2106.02 states: Mathematical Algorithms

> Claims to processes that do nothing more than solve mathematical problems or manipulate abstract ideas or concepts are complex to analyze and are addressed herein. If the "acts" of a claimed process manipulate only numbers, abstract concepts or ideas, or signals representing any of the foregoing, the acts are not being applied to appropriate subject matter. Gottschalk v. Benson, 409 U.S. 63, 71 - 72, 175 USPQ 673, 676 (1972). Thus, a process consisting solely of mathematical operations, i.e., converting one set of numbers into another set of numbers, does not manipulate appropriate subject matter and thus cannot constitute a statutory process.

In practical terms, claims define nonstatutory processes if they:

– consist solely of mathematical operations without some claimed practical application (i.e., executing a "mathematical algorithm"); or

– simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30 USPQ2d at 1458-59) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759), without some claimed practical application.

3. Claims 1-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specifically, claims 1-11, 28, and 30 are directed towards a mathematical algorithm which only manipulates numbers and signals without being applied to appropriate subject matter with no claimed practical application. Likewise, claims 12-19, 29, and 20-27 are directed towards apparatus or program code which performs or is for performing the aforementioned mathematical algorithm without being applied to appropriate subject matter. Additionally, claims 20-27 are directed towards a computer program embodied on a computer readable medium with code for performing method steps. As the computer program is only embodied on a computer readable medium without a functional interrelationship with a computer allowing its functionality to be realized, it is nonstatutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 20-27 are rejected** under 35 U.S.C. 102(e) as being clearly anticipated by **Gopisetty et al. (U.S. Patent No. 6,615,164 B1).**

As per claims 20-27, Gopisetty is directed to a computer program embodied on a computer readable medium **(column 16, line 22 – column 17, line 55)**. Although there are other limitations included in the claims language, the phrases "computer readable program code for" indicate intended use and the aforementioned other limitations are not given patentable weight.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. **Claims 1-6, 9-10, 12-16, 18, 20-23, 25-26, and 28-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Madievski et al. (U.S. Patent Application Publication 2004/0057585 A1) in view of Repucci et al. (U.S. Patent Application Publication 2005/0015205 A1).**

As per claim 1, Madievski is directed to a method, comprising: receiving a projection associated with a first signal and a second signal, the second signal comprising a first portion associated with the first signal and a second portion not associated with the first signal, the projection at least partially

isolating the first portion of the second signal from the second portion of the second signal (**[0008]-[0012], [0050]**); identifying one or more parameters of a model using at least a portion of the projection, the model associating the first signal and the first portion of the second signal (**[0043]**); and outputting the one or more model parameters for use in processing one or more signals (**[0043]**) but fails to explicitly disclose wherein the projection comprises an upper triangular matrix having two diagonals, *a first of the diagonals starting at an upper left corner of the upper triangular matrix and traveling down and right in the upper triangular matrix, a second of the diagonals starting at a lower left corner of the upper triangular matrix and traveling up and right in the upper triangular matrix*; and wherein identifying the one or more model parameters comprises using one or more defined areas in the upper triangular matrix, the one or more defined areas located in a single section of the upper triangular matrix *between* the *first and second* diagonals.

Repucci teaches projecting a matrix by performing canonical QR-decomposition on the matrix with an orthogonal matrix and an upper triangular matrix (**[0010], [0073], page 8, [0101]**) having two diagonals *a first of the diagonals starting at an upper left corner of the upper triangular matrix and traveling down and right in the upper triangular matrix, a second of the diagonals starting at a lower left corner of the upper triangular matrix and traveling up and right in the upper triangular matrix* wherein identifying model parameters comprises using one or more defined areas in the upper triangular matrix (**[0084]- [0089]**), the one or more defined areas located in a single section of the upper triangular matrix *between* the *first and second* diagonals (**page 5, Equation 5**). Any rectangular matrix (which includes upper and lower triangular matrices), such as the ones disclosed by Repucci, inherently has diagonals that start in lower and upper left corners that travel towards the upper and lower right corners respectively. Madievski and Repucci are analogous art because they are from the same field of endeavor, modeling and separating mixed signals. It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine the method of separating signals of Madievski with the matrix projection method of Repucci in order to minimize error in the modeled signals **(Repucci, page 8, [0101])**.

As per claim 2, the combination of Madievski and Repucci is directed to the method of claim 1, wherein identifying the one or more model parameters comprises: identifying one or more pole candidates and one or more model candidates using the projection **(Madievski, [0044]-[0045])**; and selecting at least one of the one or more pole candidates and selecting at least one of the one or more model candidates as the model parameters **(Madievski, [0046]-[0047])**.

As per claim 3, the combination of Madievski and Repucci is directed to the method of claim 1, wherein: the upper triangular matrix has a plurality of values along *the* first diagonal each value being greater than or equal to zero **(Repucci, [0010], [0073], page 8, [0101])**.

As per claim 4, the combination of Madievski and Repucci already discloses the method of claim 3, wherein identifying the one or more model parameters comprises: defining the one or more defined areas in the upper triangular matrix **(Repucci, [0101])**; and identifying one or more pole candidates using the one or more defined areas, the one or more model parameters comprising at least one of the one or more pole candidates **(Madievski [0045] and Repucci [0105]-[0106])**.

As per claim 5, the combination of Madievski and Repucci already discloses the method of claim 4, wherein the diagonals divide the upper triangular matrix into upper, lower, left, and right sections; and the one or more defined areas in the upper triangular matrix are located in the right section of the upper triangular matrix **(Repucci, [0101])**.

As per claim 6, the combination of Madievski and Repucci already discloses the method of claim 1, wherein the one or more defined areas in the upper triangular matrix comprise one or more first defined areas **(Repucci, [0101])**; and identifying the one or more model parameters further comprises: defining one or more second areas in the upper triangular matrix; and identifying one or more model candidates

using the one or more second defined areas, the one or more model parameters comprising at least one of the one or more model candidates **(Repucci, [0089])**.

As per claim 9, the combination of Madievski and Repucci already discloses the method of claim 4, wherein: defining the one or more areas in the upper triangular matrix comprises defining multiple areas in the triangular matrix **(Repucci, [0085]-[0086])**; and identifying the one or more model parameters comprises identifying one or more model parameters for each of the defined areas in the upper triangular matrix **(Repucci, [0089])**.

As per claim 10, the combination of Madievski and Repucci already discloses the method of claim 9 wherein: the one or more model parameters associated with different defined areas in the upper triangular matrix are different **(Repucci, [0085]-[0086])**; and identifying the one or more model parameters further comprises selecting the one or more model parameters associated with a specific one of the defined areas in the upper triangular matrix **(Repucci, [0087]-[0089])**.

As per claim 28, the combination of Madievski and Repucci is directed to the method of claim 1, wherein the projection at least partially isolates the first portion of the second signal from the second portion of the second signal in an orthogonal space **(Repucci, [0010], [0073], page 8, [0101])**.

As per claim 12, Madievski is directed to an apparatus, comprising: at least one input receiv*ing* a first signal and a second signal, the second signal comprising a first portion associated with the first signal and a second portion not associated with the first signal **([0008]-[0012])**; and at least one processor generat*ing* a projection associated with the first and second signals and identify*ing* one or more parameters of a model associating the first signal and the first portion of the second signal using at least a portion of the projection, the projection at least partially isolating the first portion of the second signal from the second portion of the second signal **([0043])** and output*ting* the one or more model parameters for use in processing one or more signals but fails to explicitly disclose wherein the projection comprises an upper triangular matrix having two diagonals, *a first of the diagonals starting at an upper left corner of*

the upper triangular matrix and traveling down and right in the upper triangular matrix, a second of the diagonals starting at a lower left corner of the upper triangular matrix and traveling up and right in the upper triangular matrix; and wherein identifying the one or more model parameters comprises using one or more defined areas in the upper triangular matrix, the one or more defined areas located in a single section of the upper triangular matrix *between* the *first and second* diagonals.

Repucci teaches projecting a matrix by performing canonical QR-decomposition on the matrix with an orthogonal matrix and an upper triangular matrix (**[0010], [0073], page 8, [0101]**) having two diagonals, *a first of the diagonals starting at an upper left corner of the upper triangular matrix and traveling down and right in the upper triangular matrix, a second of the diagonals starting at a lower left corner of the upper triangular matrix and traveling up and right in the upper triangular matrix*; wherein identifying model parameters comprises using one or more defined areas in the upper triangular matrix (**[0084]- [0089]**), the one or more defined areas located in a single section of the upper triangular matrix *between* the *first and second* diagonals (**page 5, Equation 5**). Any rectangular matrix (which includes upper and lower triangular matrices), such as the ones disclosed by Repucci, inherently has diagonals that start in lower and upper left corners that travel towards the upper and lower right corners respectively. Madievski and Repucci are analogous art because they are from the same field of endeavor, modeling and separating mixed signals. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of separating signals of Madievski with the matrix projection method of Repucci in order to minimize error in the modeled signals (**Repucci, page 8, [0101]**).

As per claim 13, the combination of Madievski and Repucci is directed to the apparatus of claim 12, wherein the at least one processor is operable to identify the one or more model parameters by: identifying one or more pole candidates and one or more model candidates using the projection (**Madievski, [0044]-[0045]**); and selecting at least one of the one or more pole candidates and selecting at least one of the one or more model candidates as the model parameters (**Madievski, [0046]-[0047]**).

As per claim 14, the combination of Madievski and Repucci is directed to the apparatus of claim 12, wherein: the projection comprises an orthogonal matrix and an upper triangular matrix; and the upper triangular matrix has a plurality of values along *the first* diagonal of the upper triangular matrix, each value being greater than or equal to zero **(Repucci, [0010], [0073], page 8, [0101])**.

As per claim 15, the combination of Madievski and Repucci already discloses the apparatus of claim 14, wherein the at least one processor is operable to identify the one or more model parameters by: defining one or more areas in the upper triangular matrix **(Repucci, [0101])**; and identifying one or more pole candidates using the one or more defined areas, the one or more model parameters comprising at least one of the one or more pole candidates **(Madievski [0045] and Repucci [0105]-[0106])**.

As per claim 16, the combination of Madievski and Repucci already disclose the apparatus of claim 12, wherein the one or more defined areas in the upper triangular matrix comprise one or more first defined areas **(Repucci, [0101])**; and the at least one processor is operable to identify the one or more model parameters further by: defining one or more second areas in the upper triangular matrix; and identifying one or more model candidates using the one or more second defined areas, the one or more model parameters comprising at least one of the one or more model candidates **(Repucci, [0089])**.

As per claim 18, the combination of Madievski and Repucci already disclose the apparatus of claim 15 wherein: the at least one processor is operable to define the one or more areas in the upper triangular matrix by defining multiple areas in the upper triangular matrix **(Repucci, [0085])**; and the at least one processor is operable to identify the one or more model parameters by identifying one or more model parameters for each of the defined areas in the upper triangular matrix **(Repucci, [0085]-[0086])**.

As per claim 20, Madievski is directed to a computer program embodied on a computer readable medium, the computer program comprising computer readable program code for: *computer readable program code for* receiving a projection associated with a first signal and a second signal, the second signal comprising a first portion associated with the first signal and a second portion associated with at

least one disturbance, the projection at least partially isolating the first portion of the second signal from the second portion of the second signal (**[0008]-[0012], [0050]**); *computer readable program code for* identifying one or more parameters of a model associating the first signal and the first portion of the second signal using at least a portion of the projection (**[0043]**); and *computer readable program code for* outputting the one or more model parameters for use in processing one or more signals (**[0043]**) but fails to explicitly disclose wherein the projection comprises an upper triangular matrix having two diagonals, *a first of the diagonals starting at an upper left corner of the upper triangular matrix and traveling down and right in the upper triangular matrix, a second of the diagonals starting at a lower left corner of the upper triangular matrix and traveling up and right in the upper triangular matrix*; and wherein *computer readable program code for* identifying the one or more model parameters comprises using one or more defined areas in the upper triangular matrix, the one or more defined areas located in a single section of the upper triangular matrix *between* the *first and second* diagonals.

Repucci teaches projecting a matrix by performing canonical QR-decomposition on the matrix with an orthogonal matrix and an upper triangular matrix (**[0010], [0073], page 8, [0101]**) having two diagonals, *a first of the diagonals starting at an upper left corner of the upper triangular matrix and traveling down and right in the upper triangular matrix, a second of the diagonals starting at a lower left corner of the upper triangular matrix and traveling up and right in the upper triangular matrix* wherein identifying model parameters comprises using one or more defined areas in the upper triangular matrix (**[0084]-[0089]**), the one or more defined areas located in a single section of the upper triangular matrix *between* the *first and second* diagonals (**page 5, Equation 5**). Any rectangular matrix, such as the ones disclosed by Repucci, inherently has diagonals that start in lower and upper left corners that travel towards the upper and lower right corners respectively. Madievski and Repucci are analogous art because they are from the same field of endeavor, modeling and separating mixed signals. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the method of separating

signals of Madievski with the matrix projection method of Repucci in order to minimize error in the modeled signals **(Repucci, page 8, [0101])**.

As per claim 21, the combination of Madievski and Repucci is directed to the computer program of claim 20, wherein the computer readable program code for identifying the one or more model parameters comprises computer readable program code for: identifying one or more pole candidates and one or more model candidates using the projection **(Madievski, [0044]-[0045])**; and selecting at least one of the one or more pole candidates and selecting at least one of the one or more model candidates as the model parameters **(Madievski, [0046]-[0047])**.

As per claim 22, the combination of Madievski and Repucci already discloses the computer program of claim 20, wherein: the upper triangular matrix has a plurality of values along a first *of the* diagonals each value being greater than or equal to zero **(Repucci, [0010], [0073], page 8, [0101])**.

As per claim 23, the combination of Madievski and Repucci already discloses the computer program of claim 20, wherein the one or more defined areas in the upper triangular matrix comprise one or more first defined areas **(Repucci, [0101])**; and the computer readable program code for identifying the one or more model parameters comprises computer readable program code for: defining the one or more first areas in the upper triangular matrix **(Repucci, [0101])**; identifying one or more pole candidates using the one or more first defined areas **(Madievski [0045] and Repucci [0105]-[0106])**; defining one or more second areas in the upper triangular matrix **(Repucci, [0085]-[0086])**; and identifying one or more model candidates using the one or more second defined areas **(Repucci, [0087]-[0089])**, the one or more model parameters comprising at least one of the one or more pole candidates and at least one of the one or more model candidates **(Madievski [0045] and Repucci [0105]-[0106])**.

As per claim 25, the combination of Madievski and Repucci already discloses the computer program of claim 23, wherein: the computer readable program code for defining the one or more areas in the upper triangular matrix defines multiple first areas in the triangular matrix **(Repucci, [0085]-[0086])**;

and the computer readable program code for identifying the one or more model parameters comprises computer readable program code for identifying one or more model parameters for each of the first defined areas in the upper triangular matrix **(Repucci, [0089])**.

As per claim 26, the combination of Madievski and Repucci already discloses the computer program of claim 25 wherein: the upper triangular matrix comprises a first upper triangular matrix **(Repucci, [0073])**, the one or more model parameters associated with different first defined areas in the first upper triangular matrix are different **(Repucci, [0085]-[0086])**; and the computer readable program code for identifying the one or more model parameters further comprises computer readable program code for selecting the one or more model parameters associated with a specific one of the first defined areas in the upper triangular matrix **(Repucci, [0087]-[0089])**.

As per claim 29, the combination of Madievski and Repucci is directed to the apparatus of claim 12, wherein the at least one processor is operable to output the one or more model parameters for use in processing one or more signals by: storing the one or more model parameters **(Madievski, [0042])**; and using the one or more stored model parameters to de-noise the second signal **(Madievski, [0047]-[0048], [0055])**.

As per claim 30, the combination of Madievski and Repucci is directed to the method of claim 1, wherein: the first diagonal extends from the upper left corner to a lower right corner of the upper triangular matrix; and the second diagonal extends from the lower left corner to an upper right corner of the upper triangular matrix **(Repucci, [0089])**.

Allowable Subject Matter

6. Claims 7-8, 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten so that the 101 issues are resolved. Claims 17, 19, 24, and 27 also contain allowable subject matter but would be allowable only if rewritten in independent form including

all of the limitations of the base claim and any intervening claims as well as resolving the 112 and 101 issues and removing the claim language indicating intended use. The reasons for allowance are held in abeyance until all other outstanding rejections in regards to the instant application are resolved.

Response to Arguments

7. Applicant's arguments filed 09/04/07 have been fully considered but they are not persuasive.

8. The 101 rejection of claims 1-30 are maintained. Specifically, claims 1-11, 28, and 30 are directed towards a mathematical algorithm which only manipulates numbers and signals without being applied to appropriate subject matter with no claimed practical application. Likewise, claims 12-19, 29, and 20-27 are directed towards apparatus or program code which performs or is for performing the aforementioned mathematical algorithm without being applied to appropriate subject matter. Additionally, claims 20-27 are directed towards a computer program embodied on a computer readable medium with code for performing method steps. As the computer program is only embodied on a computer readable medium without a functional interrelationship with a computer allowing its functionality to be realized, it is nonstatutory.

Furthermore, Examiner notes that claims 20-27 contain intended use language such as the phrases "computer readable program code for" and any limitations following these phrases are not given patentable weight; thus claims 20-27 are fully anticipated by any computer program code.

9. The 35 U.S.C. 112 rejection of claims 1-11 and 20-28 have been withdrawn due to the amended claims. The 35 USC. 112 rejection of claim 12 and its dependent claims is maintained. The Examiner makes no assertion that an "input" can only receive a single signal, only that it is unclear how an "input" as recited in claim 12 can receive any signals. By definition, an input is a signal. The input port or input bus of an apparatus receives the input (signal). It is unclear how a signal receives a signal.

10. The 35 U.S.C. 102 rejection of claims 12-19 have been withdrawn due to the amended claims, however the 102 rejection of claims 20-27 are maintained as they are still directed to program code stored on a medium with intended use which is not given patentable weight.

11. In response to Applicant's argument that Repucci does not disclose identifying one or more model parameters using one or more defined areas which are located in a single section of the upper triangular matrix between the first and second diagonals, the Applicant is further directed to paragraphs [0084]-[0089] wherein the model parameters are derived from hierarchical decomposition of an original upper triangular matrices which consists of other upper-triangular matrices. The other upper-triangular matrices fall within a single section of the upper triangular matrix between the first and second diagonals, by identifying model parameters using one or more defined areas between diagonals with the derived set of upper-triangular matrices, Repucci renders the aforementioned limitation obvious.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. The prior art made of record is not relied upon because it is cumulative to the applied rejection. These references include:

1. U.S. Patent No. 6,564, issued to Kadtke et al. on 05/13/06.
2. U.S. Patent Application Publication 2004/0071103A1 published by Henttu on 04/15/04.
3. "Blind signal separation with a projection pursuit index" published by Sarajedini et al. in 1998.
4. "Blind Deconvolution of Dynamical Systems: A State-Space Approach" published by Zhang et al. in March 2000.
5. U.S. Patent No. 6,622,117 B2 issued to Deligne et al. on 09/16/03.
6. U.S. Patent No. 5,980,097 issued to Dagnachew on 11/09/99.
7. U.S. Patent Application Publication 2004/0078412 published by Nakanishi on 04/22/04.
8. U.S. Patent No. 6,907,513 B2 issued to Nakanishi on 06/14/05.
9. U.S. Patent No. 6,757,596 B2 issued to Lin on 06/29/04.
10. U.S. Patent No. 7,003,380 B2 issued to MacMartin et al. on 02/21/06.
11. U.S. Patent No. 7,089,159 B2 issued to Hachiya on 08/08/06.
12. U.S. Patent No. 6,510,354 B1 issued to Lin on 01/21/03.
13. U.S. Patent No. 5,991,525 issued to Shah et al. on 11/23/99.
14. U.S. Patent No. 5,706,402 issued to Bell on 01/06/98.

13. All Claims are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suzanne Lo whose telephone number is (571)272-5876. The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571)272-2297. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Suzanne Lo
Patent Examiner
Art Unit 2128

SL
11/15/07

KAMINI SHAH
SUPERVISORY PATENT EXAMINER